

FY2013

TOBYHANNA ARMY DEPOT

Army Defense Environmental Restoration Program

Installation Action Plan

Printed 24 September 2013

Table of Contents

Statement Of Purpose.....	1
Acronyms.....	2
Installation Information.....	4
5-Year / Periodic Review Summary.....	6
Land Use Control (LUC) Summary.....	7
Cleanup Program Summary.....	9
Installation Restoration Program.....	10
IRP Summary.....	11
IRP Contamination Assessment.....	12
IRP Previous Studies.....	14
Installation Restoration Program Site Descriptions.....	17
TBAD-001 SANITARY LANDFILL 1963.....	18
TBAD-004 BURNING AREAS E/NE OF BARNEY'S LAKE.....	19
TBAD-007 AREA B, STAGING AREA.....	20
TBAD-067 U AREA.....	21
Installation Restoration Program Site Closeout (No Further Action) Sites Summary.....	22
Installation Restoration Program Schedule.....	25
Installation Restoration Program Milestones.....	25
IRP Schedule Chart.....	28
Military Munitions Response Program.....	29
MMRP Summary.....	30
MMRP Contamination Assessment.....	31
MMRP Previous Studies.....	32
Military Munitions Response Program Site Descriptions.....	33
TYAD-001-R-01 FAR-A, Powder Smoke Ridge.....	34
Military Munitions Response Program Site Closeout (No Further Action) Sites Summary.....	35
Military Munitions Response Program Schedule.....	36

Table of Contents

Military Munitions Response Program Milestones.....	36
MMRP Schedule Chart.....	37

Statement of Purpose

The purpose of the Installation Action Plan (IAP) is to outline the total multiyear cleanup program for an installation. The plan identifies environmental cleanup requirements at each site or area of concern (AOC), and proposes a comprehensive, installation-wide approach, along with the costs and schedules associated with conducting investigations and taking the necessary remedial actions (RA).

In an effort to coordinate planning information between the restoration manager, the US Army Environmental Command (USAEC), the Army Materiel Command (AMC), Tobyhanna Army Depot (TYAD), the executing agencies, regulatory agencies, and the public, an IAP was completed. The IAP is used to track requirements, schedules, and budgets for all major Army installation cleanup programs.

All site-specific funding and schedule information has been prepared according to projected overall Army funding levels and is, therefore, subject to change.

Acronyms

AEDB-R	Army Environmental Database - Restoration
AMC	Army Materiel Command
AOC	Area Of Concern
ARAR	Applicable or Relevant and Appropriate Requirement
BRAC	Base Realignment and Closure
CC	Compliance-related Cleanup
CERCLA	Comprehensive Environmental Response Compensation and Liability Act of 1980
COC	Contaminants of Concern
CS	Confirmatory Sampling
DD	Decision Document
DoD	Department of Defense
EA	Endangerment Assessment
EE/CA	Engineering Evaluation/Cost Analysis
ERA	Ecological Risk Assessment
ERM	Environmental Resources Management, Inc.
ESE	Environmental Science and Engineering, Inc.
FAR	Former Artillery Range
FRA	Final Remedial Action
FS	Feasibility Study
FY	Fiscal Year
IAP	Installation Action Plan
ID	Identification
IRA	Interim Remedial Action
IRP	Installation Restoration Program
K	thousand
LF	Landfill
LTM	Long-Term Management
LUC	Land Use Control
MCL	Maximum Contaminant Level
MEC	Munitions and Explosives of Concern
mm	millimeter
MMRP	Military Munitions Response Program
MNA	Monitored Natural Attenuation
MRSPP	Munitions Response Site Prioritization Protocol
N/A	Not Applicable
NFA	No Further Action
NPL	National Priorities List
OU	Operable Unit
PA	Preliminary Assessment
PADEP	Pennsylvania Department of Environmental Protection
PAH	Polycyclic Aromatic Hydrocarbons
PCB	Polychlorinated Biphenyl
PCE	Tetrachloroethylene
PMC	Program Management Company
PPB	Parts Per Billion

Acronyms

RA	Remedial Action
RA(C)	Remedial Action - Construction
RAB	Restoration Advisory Board
RC	Response Complete
RCRA	Resource Conservation and Recovery Act
RD	Remedial Design
RFA	RCRA Facility Assessment
RI	Remedial Investigation
RIP	Remedy-in-Place
ROD	Record of Decision
RRSE	Relative Risk Site Evaluation
SI	Site Inspection
STP	Sewage Treatment Plant
SVI	Soil Vapor Intrusion
SWMU	Solid Waste Management Unit
TAPP	Technical Assistance for Public Participation
TBAD	AEDB-R designation for Tobyhanna Army Depot
TCE	Trichloroethylene
TRC	Technical Review Committee
TYAD	Tobyhanna Army Depot
USACE	US Army Corps of Engineers
USAEC	US Army Environmental Command
USAEHA	US Army Environmental Hygiene Agency
USATHAMA	United States Army Toxic and Hazardous Materials Agency
USCHPPM	US Army Center for Health Promotion and Preventive Medicine
USEPA	US Environmental Protection Agency
UXO	Unexploded Ordinance
VOC	Volatile Organic Compound
VS	Verification Study
WWI	World War I
WWII	World War II

Installation Information

Installation Locale

Installation Size (Acreage): 1296

City: Coolbaugh Township

County: Monroe

State: Pennsylvania

Other Locale Information

TYAD is located in the Pocono Mountains of northeastern Pennsylvania, approximately 15 miles southeast of Scranton, Pennsylvania, in Coolbaugh Township, Monroe County. The installation covers 2.2 square miles, measuring 1.6 miles east to west and 2.2 miles north to south at the widest point. The area surrounding TYAD is rural, with the village of Tobyhanna bordering the installation at the southeast corner. Tobyhanna State Park and Gouldsboro State Park are adjacent to the installation, on the northeast and northwest sides, respectively.

Installation Mission

TYAD is the Defense Department's largest facility for the overhaul, repair, fabrication and systems integration of command, control, communications, computers, intelligence, surveillance and reconnaissance systems. Supported systems include radios, radars, satellite communications, airborne surveillance and navigation, aircraft survivability equipment, and tactical missile guidance and control systems. The depot also operates more than 20 forward repair activities at major installations, and in support of deployed forces.

Lead Organization

Army Materiel Command (AMC)

Lead Executing Agencies for Installation

TYAD, Environmental Management Division

US Army Corps of Engineers (USACE), Baltimore District

Regulator Participation

Federal	US Environmental Protection Agency (USEPA), Region III
State	Pennsylvania Department of Environmental Protection (PADEP)

National Priorities List (NPL) Status

A score of 38 was recorded on 01-AUG-90.

Date for RA(C) Completion: 200607

Date for NPL Deletion: 200110

Installation Restoration Advisory Board (RAB)/Technical Review Committee (TRC)/Technical Assistance for Public Participation (TAPP) Status

RAB established 199503

Installation Information

Installation Program Summaries

IRP

Primary Contaminants of Concern: Metals, Volatiles (VOC)

Affected Media of Concern: Groundwater

MMRP

Primary Contaminants of Concern: Explosives, Metals, Munitions and explosives of concern (MEC)

Affected Media of Concern: Soil

5-Year / Periodic Review Summary

5-Year / Periodic Review Summary

Status	Start Date	End Date	End FY
Complete	201201	201209	2012
Complete	200709	200709	2007
Complete	200209	200209	2002
Planned	201701	201709	2017

Last Completed 5-Year / Periodic Review Details

Associated ROD/DD Name	Sites
Operable Unit #5	TBAD-001
Operable Unit 1, Areas A and B	TBAD-004, TBAD-007
Record of Decision OU#4	TBAD-055

Results The 5 year review report is complete. The remedies in place at OU-1, OU-4 and OU-5 are protective of human health and the environment. One more vapor intrusion sampling will take place at resident R1-111 in OU-1.

Actions Complete another vapor intrusion sample in the first floor of resident R-111.

Plans Reevaluate the MNA at OU-1 and OU-5.

Recommendations and Implementation Plans:

There are six recommendations from the FY12 five-year review for OU-1.

1. TYAD must reevaluate the clean up that was conducted at OU-1 in 1996 with the current maximum contamination level (MCL). TYAD has contracted US Army Corps of Engineers (USACE) to reevaluate OU-1 with the current toxicity standards.
2. TYAD must obtain a right of entry for the off post resident where monitoring well R1-94 is located. The owner for this property has changed and a new right of entry is being drafted for the current owner. This will be completed in fiscal year (FY)13.
3. The USEPA requested TYAD to take another vapor intrusion sample at off post residence R1-111. The vapor intrusion sampling conducted in fall of FY11 showed that there was trichloroethylene (TCE) on the first floor of this residence. This was inconsistent with other sampling taken from the basement and sump of the same house. Both the basement and sump samples did not contain TCE. To confirm that the TCE was from a household source rather than the contamination at OU-1 TYAD conducted an additional sampling on Sept. 20, 2012. There was no TCE contamination in the additional sampling.
4. TYAD must develop an exit strategy for OU-1. The exit strategy for OU-1 will be reevaluated as part of the 2013 annual performance evaluations.
5. TYAD must investigate increasing TCE levels at OU-5. TYAD contracted USACE to conduct a permeability test of the landfill cap.
6. TYAD must reevaluate the monitored natural attenuation (MNA) alternative at OU-5. This will be completed as part of the 2013 annual performance evaluation.

Land Use Control (LUC) Summary

LUC Title: Operable Unit #5

Site(s): TBAD-001

ROD/DD Title: Operable Unit #5

Location of LUC

Inactive Sanitary Landfill

Land Use Restriction: Landfill restriction - Prohibit activities that would impact the LF cap (or cover system) and drainage system, Landfill restriction - Prohibit excavation on LF cap or cover system, Landfill restriction - Prohibit installation of utility system lines through the site, Media specific restriction - prohibit use of groundwater for consumption or domestic purposes, Media specific restriction - restrict drinking water well installation

Types of Engineering Controls: Fences

Types of Institutional Controls: Notations in Master Plan, Restrictions on Groundwater Withdrawal, Restrictive covenants, Zoning

Date in Place: 200010

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: N/A

LUC Enforcement: Annual Inspections, 5 Year Reviews

Contaminants: INORGANICS, METALS, PAH, VOC

Additional Information

N/A

LUC Title: Operable Unit 1

Site(s): TBAD-004, TBAD-007

ROD/DD Title: Operable Unit 1, Areas A and B

Location of LUC

Tobyhanna Army Depot Environmental Management Division.

Land Use Restriction: Media specific restriction - prohibit use of groundwater for consumption or domestic purposes, Media specific restriction - restrict drinking water well installation, Media specific restriction - restrict withdrawal or use of groundwater for agricultural/irrigation purposes, Media specific restriction - restrict withdrawal or use of groundwater w/out treatment

Types of Engineering Controls: None

Types of Institutional Controls: Notations in Master Plan, Notices (in the grantor/grantee index, newspapers, etc.), Restrictions on Groundwater Withdrawal, Restrictions on land use

Date in Place: 199709

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: 201009

LUC Enforcement: Annual Inspections

Contaminants: VOC

Additional Information

Land Use Control (LUC) Summary

N/A

LUC Title: Operable Unit 4

Site(s): TBAD-055

ROD/DD Title: Record of Decision OU#4

Location of LUC

Tobyhanna Army Depot Environmental Management Division

Land Use Restriction: Media specific restriction - Prohibit, or otherwise manage excavation below a specified depth

Types of Engineering Controls: Fences, Signs

Types of Institutional Controls: Education programs, Notations in Master Plan, Restrictions on land use

Date in Place: 200009

Modification Date: N/A

Date Terminated: N/A

Inspecting Organization: Installation

Record of LUC: Master Plan or Equivalent

Documentation Date: 201009

LUC Enforcement: Annual Inspections, 5 Year Reviews

Contaminants: Unexploded Ordnance(UXO)

Additional Information

N/A

Cleanup Program Summary

Installation Historic Activity

The Army's association with Tobyhanna dates back to 1912, when a field artillery unit leased property from a local resident to conduct training. The following year, the Army began to purchase land for a permanent field artillery and machine gun training camp. The camp was known by several names in its early years, including Camp Summerall, Camp Tobyhanna, and the Tobyhanna Military Reservation.

During World War I (WW I) the reservation was used as an ambulance and tank regiment training center and an ordnance storage depot.

Use of the camp declined after WWI, but the National Guard continued to train at Tobyhanna through the 1920s. From 1932 to 1938, the area was used as a camp by the Civilian Conservation Corps. From 1938 to 1941, the area was used by cadets from West Point for field artillery training.

In 1942 the installation was reactivated as an Army/Air Force service unit training center. In 1944 the area was also converted to a storage and supply area for gliders and other equipment of the Air Service Command. The installation also housed approximately 200 German prisoners of war from January through December 1945. The enlisted prisoners were contracted to harvest ice and farm crops while confined at Tobyhanna. The installation was deactivated after World War II (WW II).

In 1949 the Commonwealth of Pennsylvania purchased the Tobyhanna site from the War Assets Administration. From 1949 to 1951 the Department of Forests and Waters and the Pennsylvania Game Commission maintained the property.

During January 1951, 2.2 square miles were obtained by the US Army Signal Corps to construct Tobyhanna Army Depot (TYAD). TYAD was constructed by a civilian contractor that used the southeastern corner of TYAD as a base of operations/equipment staging area. The balance of the tract remained state-owned with the federal government exercising recovery rights. From the following years to the present, much of this tract has been designated state game lands and parks.

During February 1953 Tobyhanna Signal Depot was established as a Class II installation, with an assigned supply mission. In August 1962, the depot was re-designated and transferred to the AMC. Since then, TYAD has expanded into a global enterprise as Department of Defense's (DoD) C4ISR logistics sustainment center. The installation is also home to more than 20 tenant activities.

Installation Program Cleanup Progress

IRP

Prior Year Progress: Annual groundwater monitoring of TBAD-001, TBAD-004, TBAD-007, and TBAD-067 will be conducted in 2013. The final vapor intrusion report has been sent to the regulators. The vapor intrusion investigation will be completed in 2013.

Future Plan of Action: Annual groundwater monitoring of TBAD-001, TBAD-004, TBAD-007, and TBAD-067 will continue in 2014 and 2015.

MMRP

Prior Year Progress: TYAD has completed the record of decision (ROD) to close the former firing point six, TBAD-002-R-01, with no further action (NFA). Vegetation clearing will be completed along the unexploded ordnance (UXO) fence. UXO fence maintenance will be conducted.

Future Plan of Action: Periodic tree clearing along the UXO fence will be completed as necessary.

TOBYHANNA ARMY DEPOT
Army Defense Environmental Restoration Program
Installation Restoration Program

IRP Summary

Installation Total Army Environmental Database-Restoration (AEDB-R) Sites/Closeout Sites Count: 67/63

Installation Site Types with Future and/or Underway Phases

1	Burn Area (TBAD-004)
1	Contaminated Ground Water (TBAD-067)
1	Landfill (TBAD-001)
1	Storage Area (TBAD-007)

Most Widespread Contaminants of Concern

Metals, Volatiles (VOC)

Media of Concern

Groundwater

Completed Remedial Actions (Interim Remedial Actions/ Final Remedial Actions (IRA/FRA))

Site ID	Site Name	Action	Remedy	FY
TBAD-004	BURNING AREAS E/NE OF BARNEY'S LAKE	IRA	ALTERNATE WATER SUPPLY/WATER SUPPLY TREATMENT	1989
TBAD-007	AREA B, STAGING AREA	IRA	ALTERNATE WATER SUPPLY/WATER SUPPLY TREATMENT	1991
TBAD-007	AREA B, STAGING AREA	FRA	EX SITU SOIL TREATMENT	1996
TBAD-007	AREA B, STAGING AREA	FRA	WASTE REMOVAL - DRUMS, TANKS, BULK CONTAINERS	1996
TBAD-063	PCB TRANSFORMERS	FRA	WASTE REMOVAL - SOILS	1996
TBAD-066	UST SITE RESTORATION AREAS	FRA	WASTE REMOVAL - SOILS	1996
TBAD-004	BURNING AREAS E/NE OF BARNEY'S LAKE	FRA	INSTITUTIONAL CONTROLS	1997
TBAD-007	AREA B, STAGING AREA	FRA	INSTITUTIONAL CONTROLS	1997
TBAD-004	BURNING AREAS E/NE OF BARNEY'S LAKE	FRA	NATURAL ATTENUATION	1998
TBAD-007	AREA B, STAGING AREA	FRA	NATURAL ATTENUATION	1998
TBAD-001	SANITARY LANDFILL 1963	FRA	INSTITUTIONAL CONTROLS	2001
TBAD-001	SANITARY LANDFILL 1963	FRA	NATURAL ATTENUATION	2001
TBAD-067	U AREA	FRA	NATURAL ATTENUATION	2003
TBAD-067	U AREA	FRA	IN-SITU SOIL TREATMENT	2006

Duration of IRP

Date of IRP Inception: 197904

Estimated Date for Remedy-In-Place (RIP)/Response Complete (RC): 200607/204309

Date of IRP completion including Long Term Management (LTM): 204309

IRP Contamination Assessment

Contamination Assessment Overview

In January 1980, an initial installation assessment was completed which did not recommend any follow-on investigations. In 1981, TYAD drinking water wells were tested for TCE. Low levels were found in Well No. 3. In 1981 the installation installed a charcoal filter on Well No. 3 and since then has been testing the water bi-monthly for VOCs. In 1989, the charcoal filter on Well No. 3 was replaced by an air stripper. The concentration of TCE in the influent had been consistently in the eight to 12 parts per billion (ppb) range. In 1981, Monroe County had the PADEP sample residential wells in the village of Tobyhanna. Levels of TCE below the PADEP MCL of 45 ppb were found. In 1986, Monroe County had the PADEP resample the same residential wells, and results indicated that low levels of TCE were still present in the groundwater; however, in 1988, the USEPA lowered the TCE MCL to five ppb. In January 1988, the initial installation assessment for TYAD was updated. The assessment recommended that a follow-on investigation be conducted for the TCE found in the domestic wells.

In 1988, the US Army Toxic and Hazardous Materials Agency (USATHAMA), currently the USAEC, initiated a remedial investigation (RI)/ feasibility study (FS). The RI report indicated that Area B (AEDB-R site TBAD-007), used for staging materials during the construction of the depot, was the source of groundwater contamination in off-post residential wells and TYAD Well No. 3. There was also soil and groundwater contamination at Area A [AEDB-R designation for TYAD TBAD-004], but the contamination was confined within the depot boundaries. Areas A and B are now collectively defined as operable unit (OU) 1. The endangerment assessment (EA) report conducted in 1992 concluded that there was a low level of risk to human health and the environment and that the no-action alternative was not viable. The preferred alternative cited in the FS report consisted of passive soil volatilization (excavating and tilling in a controlled atmosphere) and extraction and treatment of groundwater. In April 1990, an effort was initiated to install additional groundwater monitoring wells, pump test wells, and observation wells. Pump tests were performed, groundwater, surface water, and sediment were sampled, a wetlands survey was performed, and the USEPA Region III comments on the RI, EA, and FS were addressed. In February 1993, the USEPA approved the OU 1 RI addendum, EA, and FS reports.

In September 1993, the OU 1 proposed RA plan was submitted for public review and comment. The public review and comment period closed in December 1993. The OU 1 ROD was not finalized due to an Army/regulatory difference in the interpretation of the state's applicable or relevant and appropriate requirement (ARAR) that defined the groundwater treatment level as background. This issue was elevated to the Deputy Assistant Secretary of the Army (Environment, Safety and Occupational Health) for resolution; however, it was resolved when Pennsylvania's Land Recycling and Environmental Remediation Standards Act (Act 2 of 1995), which establishes specific cleanup levels for soil and groundwater, was signed into law. Under this act, the state cleanup levels for groundwater became the same as the federal MCL, to which the Army had agreed. Although the ROD had not been finalized, the Army began remedial design (RD) work. As part of the RD, preliminary design engineering studies for groundwater and soil treatment were initiated.

Preliminary results from these field investigations indicate that the extent of contamination was significantly smaller than previously noted. The Army evaluated this information and determined that the recommended response actions should be revised. In July 1995, the Army provided the regulatory agencies with a revised groundwater treatment strategy.

In April 1996, TYAD, the USEPA and the PADEP reached an agreement regarding soil and groundwater treatment at OU 1. The remediation for groundwater would include natural attenuation, continued monitoring, institutional controls, and a site condition review at five-year intervals. In regard to soils, TYAD completed a source soil removal action at area B in August 1995. This action eliminated any need for further action regarding the treatment of soil. In 1997 a natural attenuation ROD was signed between the Army and the USEPA.

In 1996, NFA RODs were signed for OU 2 (TBAD-063), a former polychlorinated biphenyl (PCB) substation site, and OU 3 (TBAD-037 and -038), two former hazardous waste facilities. A verification study (VS) was completed in February 1996, providing environmental characterization data for 11 AOCs (TBAD-001, -002, -005, -008, -032, -042, -043, -058, -059, -061, -063). The VS recommends NFA/investigation at five AOCs (TBAD-002, -005, -032, -043, -058), bringing the total of no action AOCs at TYAD to 57. An ecological risk assessment (ERA) addressed the remaining six sites. The two AOCs referred to as OU 1 were not part of the VS. The 65 AOCs are a combined list of all AOCs identified in the Evaluation of Solid Waste Management Units (SWMU) Report for TYAD, prepared by the US Army Environmental Hygiene Agency (USAEHA), currently the US Army Center for Health Promotion and Preventive Medicine (USACHPPM), dated March 1990, and the phase II Resource Conservation and Recovery Act (RCRA) Facility Assessment (RFA) Report for TYAD (May 1987), prepared by A.T. Kearney, Inc. and Baker/TSA, Inc. Table I lists all previous studies completed at TYAD.

IRP Contamination Assessment

Contamination Assessment Overview

A draft ERA was completed and submitted to the regulatory agencies for review in 2000. The ERA systematically addressed and documented potential environmental risks as a result of past known or suspected contaminant releases. The ERA was completed in FY00.

The RI report for AOC 1 (TBAD-001), the inactive sanitary landfill, was finalized. Both the USEPA and PADEP have concurred with the findings and recommendations in the report. The report recommended additional monitoring of wells off-post and long-term monitoring for VOCs. Based upon the report's recommendations, four additional monitoring wells have been established in adjacent state park property.

In FY98, TYAD and the USEPA signed a closeout document for the following 35 NFA AOCs:

TBAD-003 TBAD -005 TBAD -006 TBAD -009 TBAD -010
TBAD -011 TBAD -012 TBAD -013 TBAD -014 TBAD -015
TBAD -016 TBAD -017 TBAD -018 TBAD -020 TBAD -021
TBAD -022 TBAD -023 TBAD -024 TBAD -025 TBAD -026
TBAD -027 TBAD -028 TBAD -029 TBAD -030 TBAD -031
TBAD -034 TBAD -035 TBAD -046 TBAD -053 TBAD -054
TBAD -056 TBAD -057 TBAD -060 TBAD -062 TBAD -065

In FY98 the RD document for OU 1 (TBAD-004 and -007) was finalized. This document was prepared to be consistent with the ROD for OU 1 that provided for natural attenuation of groundwater and no action for soil. In addition, a community relations plan was completed.

In FY99, TYAD and the USEPA signed a closeout document for the following 18 NFA AOCs:

TBAD-002 TBAD -019 TBAD -033
TBAD -036 TBAD -039 TBAD -040
TBAD -041 TBAD -042 TBAD -043
TBAD -044 TBAD -045 TBAD -047
TBAD -048 TBAD -049 TBAD -050
TBAD -051 TBAD -052 TBAD -058

In FY00, a health risk assessment and a focused FS were prepared for the inactive sanitary landfill (TBAD-001). Also, an engineering evaluation/cost analysis (EE/CA) for the UXO Area (TBAD-055) was completed. RODs were completed for AOCs in TBAD-001 and TBAD -055.

In 2001, TYAD became the first federal facility in the USEPA Region III to achieve "partial delisting." Sixty-two of the original 65 AOCs were removed from the NPL. The remaining three sites require long-term groundwater monitoring. Groundwater samples were collected twice a year for several years and analyzed to monitor progress of natural attenuation. The goal to delist was set by TYAD, the USEPA and the PADEP for 2001. This goal was achieved through excellent partnering between the three agencies.

In 2007, long-term groundwater monitoring was reduced to annual sampling. The first five-year review was completed in 2007.

Cleanup Exit Strategy

Groundwater monitoring will be continued until contaminants of concern (COC) are below the MCL. Vapor intrusion sampling has been mandated by the regulators. The sampling has been completed and the vapor intrusion investigation report has been sent to the USEPA and PADEP for concurrence. The vapor intrusion investigation will be completed in FY13.

IRP Previous Studies

	Title	Author	Date
1977	Evaluation of the impact of the Tobyhanna Army Depot Landfill on groundwater resources	A.W. Martin Associates, Inc	DEC-1977
1980	Installation Assessment of TYAD, Report Number 159	USATHAMA	JAN-1980
	Environmental Assessment of TYAD Landfill	Spotts, Stevens and McCoy, Inc	MAY-1980
	Water Quality Evaluation, Barney's Lake	Spotts, Stevens and McCoy, Inc	DEC-1980
1981	Water Quality Monitoring Consultation No. 31-62-0109-82	USAEHA	OCT-1981
1982	Water Quality Bioassay Study No. 32-24-0332-82, Permit Appeal	USAEHA	JAN-1982
1983	Revised Potable/Recreational Water Quality Survey No. 31-61-0118-83	USAEHA	APR-1983
1985	APR 1985, Water Quality Engineering Special Study No. 32-61-0138-85	USAEHA	APR-1985
	Hazardous Waste Study No. 37-26-0596-86, Soil Sampling at Sludge Storage Site	USAEHA	NOV-1985
1986	Phase I Water Quality Engineering Study No. 32-24-0795-87	USAEHA	SEP-1986
	Hazardous Waste Study No. 37-26-1397-87	USAEHA	OCT-1986
1987	Recreational Water Quality Engineering Survey No. 31-61-0176-87	USAEHA	JAN-1987
	Phase II RCRA Facility Assessment Report for the TYAD, PAD 5213820892	A.T. Kearney, Inc. and Baker/TSA, Inc.	MAY-1987
1988	Final Update of the Initial Installation Assessment of TYAD	Environmental Science and Engineering, Inc. (ESE)	JAN-1988
	Final Report of the Study of Storm water Runoff from Coal Piles at the TYAD	ESE	APR-1988
	RI/FS at TYAD Final RI Report A011	ESE	DEC-1988
1989	RI/FS at TYAD Final Focused Remedial Alternative Evaluation	Spotts, Stevens and McCoy, Inc	MAR-1989
	Industrial Radiation study No. 27-43-8878-90	USAEHA	JUL-1989
	Hazardous Waste Management Study No. 37-26-8800-90	USAEHA	AUG-1989
	Water Quality Biological Study No. 32-24-0938-90, Toxicity Identification Evaluation	USAEHA	OCT-1989
	Investigation of Fish Kill in Oakes Swamp	USAEHA	NOV-1989
	Wastewater Engineering Consultation No. 32-61-0162-90	USAEHA	NOV-1989

IRP Previous Studies

	Title	Author	Date
1990	Groundwater Quality Survey No. 38-26-K914-90, Evaluation of Solid Waste Management Units,	USAEHA	MAR-1990
1991	Wastewater Management Survey No. 32-61-0183-91	USAEHA	JUN-1991
1992	Water Quality Survey No. 31-2-0349-92	USAEHA	APR-1992
	RI/FS at TYAD Draft Final Endangerment Assessment Report	ESE	DEC-1992
1996	Final Monitoring/Residential Well Sampling Program and Verification Studies, Technical Report, ELIN A009	ESE	MAR-1996
	Final RI, AOC #1-Inactive Sanitary Landfill Technical Report, ELIN A009	Environmental Resources Management, Inc. (ERM)	AUG-1996
1997	Final RI, AOC 1, Inactive Sanitary Landfill Technical Report, ELIN A009	ERM	FEB-1997
	Final RI, AOC #1-Inactive Sanitary Landfill Technical Report, ELIN A009	ERM	AUG-1997
1998	Community Relations Plan for TYAD	Weston Solutions, Inc.	NOV-1998
2000	Focus FS, AOC #1	Program Management Company (PMC) Environmental	JUL-2000
2002	Five-Year Review Report for OU-1 (Areas A and B), OU-4 and OU-5, TYAD	Weston Solutions, Inc.	SEP-2002
2006	Final Annual Performance Evaluation for OU-1	Weston Solutions, Inc.	AUG-2006
	Building Foundation Study	Weston Solutions, Inc.	DEC-2006
2007	Final Annual Performance Evaluation for OU-1	Weston Solutions, Inc.	AUG-2007
	Second Five-Year Review Report TYAD for OU-1, OU-4, and OU-5	Weston Solutions, Inc.	SEP-2007
2008	Final Annual Performance Evaluation for OU-1	Weston Solutions, Inc.	MAR-2008
2009	Final 2008 Groundwater Monitoring Report U Area	U.S. Army Corps of Engineers	OCT-2009
	Final 2008 Operable Units 1,4 and 5 Annual Performance Evaluation Report	U.S Army Corps of Engineers	OCT-2009
2010	Final 2009 Annual Performance Evaluation For Operable Unit 1, 4 and 5	Weston Solutions	MAR-2010
	Final November 2009 U Area Groundwater Monitoring Report	Weston Solutions	JUL-2010

IRP Previous Studies

2011

Title	Author	Date
Final 2010 Annual performance Evaluation For Operable Unit 1, 4 and 5	Weston Solutions	DEC-2011
Final November 2010 U Area Groundwater Monitoring Report	Weston Solutions	DEC-2011

TOBYHANNA ARMY DEPOT
Installation Restoration Program
Site Descriptions

Site ID: TBAD-001
Site Name: SANITARY LANDFILL 1963

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

Contaminants of Concern: Metals, Volatiles (VOC)

Media of Concern: Groundwater

Phases	Start	End
PA.....	197904.....	198001
SI.....	199003.....	199007
RI/FS.....	199508.....	199708
RD.....	200009.....	200009
RA(C).....	200009.....	200109
RA(O).....	200109.....	204309

RIP Date: 200109

RC Date: 204309

SITE DESCRIPTION

This site is adjacent to the rail classification yards, near the western boundary of the installation. The landfill is approximately 2,000 feet by 600 feet. It was operated from 1963 to 1979 and was reported to have received all types of wastes generated at TYAD, including plating wastes and sludges, sewage treatment plant (STP) sludge, ashes from trash burning pits, construction rubble, paints, solvents, oils, sanitary wastes, and pesticide containers.

Groundwater at this site appears to have been affected by previously disposed waste materials. In 1997 an RI was completed, which recommended establishment of off-post monitoring wells to determine the extent of possible contamination. The wells were placed in state park land in 1998. In addition, an ERA was completed and submitted for regulatory review in 1998. No impacts were found in the off-post wells. The ROD for this site was signed in September 2000. The selected remedy was MNA, long-term monitoring (LTM) and institutional controls. Five-year reviews were completed in 2002, 2007 and 2012.

CLEANUP/EXIT STRATEGY

In 2013 an analysis will be done to ensure that the cap is functioning properly. The LTM and five-year site condition reviews will continue until the groundwater samples contain no contaminants above the MCL. Once the groundwater samples contain no contaminants above the MCL, TYAD will seek regulator approval to close this site with NFA. Once regulator approval for NFA is received, groundwater monitoring wells will be legally abandoned.

Site ID: TBAD-004

Site Name: BURNING AREAS E/NE OF BARNEY'S LAKE

STATUS

Regulatory Driver: CERCLA

RRSE: HIGH

Contaminants of Concern: Volatiles (VOC)

Media of Concern: Groundwater

Phases	Start	End
PA.....	197904.....	198801
SI.....	199003.....	199007
RI/FS.....	198707.....	199106
RD.....	199709.....	199709
IRA.....	198106.....	198906
RA(C).....	199709.....	199809
RA(O).....	199709.....	204309

RIP Date: 199809

RC Date: 204309

SITE DESCRIPTION

This area is in the southeast corner of the depot. The site is 1,250 feet by 400 feet. It was used from the 1950s to the early-1960s. Past operations included trench excavation, waste burning, and in-place burial of ash residue.

In 1981 contamination was found in the water supply well ON-3. This well was equipped with a carbon groundwater treatment system. In 1989 the carbon treatment system was replaced with an air stripper. This air stripper is still being used to remove VOCs at ON3.

This site is directly adjacent to TBAD-007, which was determined to be the source of the off post groundwater contamination. The ROD refers to the sites Area A and Area B as OU-1. Sampling was conducted which indicated levels of contamination in the soil below MCLs.

The ROD for this site was signed in 1997. The remedies that were selected for this site are institutional controls, MNA and LTM. Five-year reviews were completed in 2002, 2007 and 2012.

CLEANUP/EXIT STRATEGY

The LTM and five-year site condition reviews will continue until groundwater samples contain no contaminants above the MCL. Once the groundwater samples contain no contaminants above the MCL, TYAD will seek regulator approval to close this site with NFA status. Once regulator approval for NFA is received, groundwater monitoring wells will be legally abandoned. The airstripper will be used to remove VOCs at well ON-3 until it is determined that the VOC levels that are entering the well are below levels of concern. When the VOC levels are below levels of concern the air stripper will be removed from the well water system.

Site ID: TBAD-007

Site Name: AREA B, STAGING AREA

STATUS

Regulatory Driver: CERCLA

RRSE: HIGH

Contaminants of Concern: Volatiles (VOC)

Media of Concern: Groundwater

Phases	Start	End
PA.....	199003.....	199007
SI.....	199003.....	199007
RI/FS.....	199008.....	199106
RD.....	199709.....	199709
IRA.....	199012.....	199106
RA(C).....	199503.....	199809
RA(O).....	199709.....	204309

RIP Date: 199809

RC Date: 204309

SITE DESCRIPTION

This site is located in the southeast corner of the installation, just south of Area A (TBAD-004), and southwest of the 700-series buildings. The ROD refers to this site as OU-1. The entire area, which is approximately 320 feet by 350 feet, was used for drum staging and disposal during the construction of the present depot in the 1950s. Contamination of off-post drinking water sources has been attributed to disposal at this site.

Soil excavation began in 1990 to extend water lines for 23 residents and one business surrounding the installation. Additional soil removal and several 55-gallon drums were removed from March 1995 through January 1996.

The ROD for this site was approved in September 1997. The remedies that were selected are MNA, LTM and institutional controls. Five-year reviews were completed in 2002, 2007 and 2012.

Soil vapor intrusion (SVI) testing at this site was mandated by the regulators. The final sampling was completed in the fourth quarter of FY12. The final report has been completed and is currently being reviewed by the regulators, TYAD will work with regulators have this investigation closed with NFAs in FY13.

CLEANUP/EXIT STRATEGY

The LTM and five-year site condition reviews will continue until groundwater samples contain no contaminants above the MCL. Once the groundwater samples contain no contaminants above the MCL, TYAD will seek regulator approval to close this site with NFA. Once regulator approval for NFA is received, groundwater monitoring wells will be legally abandoned. At this time the residents and business that are connected to TYAD water line will have the option to remain on TYAD water and purchase the water services from TYAD or to discontinue use of the water line and obtain their water from another source. Vapor intrusion sampling was conducted in 2011. The sampling results have been compiled into a report. The report was reviewed by the regulators in 2012. The report has been updated to address regulator approval. The report will be resubmitted to the regulators in 2013.

STATUS

Regulatory Driver: CERCLA

RRSE: MEDIUM

Contaminants of Concern: Volatiles (VOC)

Media of Concern: Groundwater

Phases	Start	End
PA.....	200109.....	200202
SI.....	200203.....	200503
RA(C).....	200201.....	200607
RA(O).....	200503.....	204309

RIP Date: 200607

RC Date: 204309

SITE DESCRIPTION

This site is located in the depot's industrial area just south of Building 1A. Analysis of groundwater from previously established monitoring wells has indicated the presence of tetrachloroethylene (PCE).

Five additional monitoring wells were placed in the U area to determine the size and concentration of the PCE plume. Sixteen monitoring wells are being sampled annually to monitor the PCE plume.

In 2006 a SVI system was installed in Building 1A to mitigate the potential of vapor intrusion and reduce the potential for contamination to migrate to the groundwater. This system is currently being operated by the installation's public works.

This site was not identified as an area of concern in the initial site assessment conducted by TYAD, so this site is not part of the federal facility agreement. TYAD has coordinated all of the site's activities with the USEPA and PADEP. It has been determined that this site will not need a ROD. In FY13 TYAD will work with the USEPA and PADEP to develop a closure agreement for this site.

CLEANUP/EXIT STRATEGY

The LTM will continue until groundwater samples contain no contaminants above the MCL. Once the groundwater samples contain no contaminants above the MCL, TYAD will seek regulator approval to close this site with NFA. Once regulator approval for NFA is received, groundwater monitoring wells will be legally abandoned.

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
TBAD-002	LANDFILL AREA	199909	No cleanup required per Operable Unit #5 ROD
TBAD-003	ASH PITS	199306	No cleanup required per Operable Unit #5 ROD
TBAD-005	ORIGINAL BURNING AREA	199809	No cleanup required per Operable Unit #5 ROD
TBAD-006	BORROW PITS	199306	Study complete, No cleanup required per Operable Unit #5 ROD
TBAD-008	OAKES SWAMP DISPOSAL AREA	200009	No cleanup required per Operable Unit #5 ROD
TBAD-009	CYANIDE SUMP	199306	No cleanup required per Operable Unit #5 ROD
TBAD-010	CYANIDE OXIDATION TANKS	199306	No cleanup required per Operable Unit #5 ROD
TBAD-011	CHROMIUM SUMP	199306	No cleanup required per Operable Unit #5 ROD
TBAD-012	CHROMIUM REDUCTION TANK	199306	No cleanup required per Operable Unit #5 ROD
TBAD-013	ACID/ALKALI SUMP	199306	No cleanup required per Operable Unit #5 ROD
TBAD-014	SURGE TANK	199306	No cleanup required per Operable Unit #5 ROD
TBAD-015	SULFIDE PRECIPITATION PRETREATMENT	199306	No cleanup required per Operable Unit #5 ROD
TBAD-016	ACID/ALKALI SURGE TANK	199306	No cleanup required per Operable Unit #5 ROD
TBAD-017	CHROMIUM SURGE TANK	199306	No cleanup required per Operable Unit #5 ROD
TBAD-018	OVERFLOW/EXCESS BACKWASH TANK	199306	No cleanup required per Operable Unit #5 ROD
TBAD-019	ORIGINAL STP	199306	No cleanup required per Operable Unit #5 ROD
TBAD-020	STP BAR SCREEN	199306	No cleanup required per Operable Unit #5 ROD
TBAD-021	STP PARSHALL FLUME	199306	No cleanup required per Operable Unit #5 ROD
TBAD-022	STP PRIMARY SETTLING TANK	199306	No cleanup required per Operable Unit #5 ROD
TBAD-023	STP DOSING TANK	199306	No cleanup required per Operable Unit #5 ROD
TBAD-024	STP SECONDARY SETTLING TANK	199306	No cleanup required per Operable Unit #5 ROD
TBAD-025	STP RECIRCULATION PIT	199306	No cleanup required per Operable Unit #5 ROD
TBAD-026	FLASH MIX/FLOCCULATION TANK	199306	No cleanup required per Operable Unit #5 ROD
TBAD-027	FINAL SETTLING TANK	199306	No cleanup required per Operable Unit #5 ROD
TBAD-028	SLUDGE THICKENER	199306	No cleanup required per Operable Unit #5 ROD
TBAD-029	SAND FILTER	199306	No cleanup required per Operable Unit #5 ROD
TBAD-030	STP CHLORINE CONTACT CHAMBER	199306	No cleanup required per Operable Unit #5 ROD
TBAD-031	STP DIGESTERS	199306	No cleanup required per Operable Unit #5

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
			ROD
TBAD-032	SEWAGE DRYING BEDS	199912	No cleanup required per Operable Unit #5 ROD
TBAD-033	DEWATERED SLUDGE/SLUDGE STORAGE SITE	199306	No cleanup required per Operable Unit #5 ROD
TBAD-034	EQUALIZATION BASIN	199306	No cleanup required per Operable Unit #5 ROD
TBAD-035	SEWAGE SLUDGE ROLL-OFF	199306	No cleanup required per Operable Unit #5 ROD
TBAD-036	DRUM/DUMPSTER STORAGE AREA	199306	No cleanup required per Operable Unit #5 ROD
TBAD-037	INDUSTRIAL WASTE STORAGE AREA BLDG 10C	199607	No cleanup required per Operable Unit #5 ROD
TBAD-038	BUILDING S-90	199607	No cleanup required per Operable Unit #5 ROD
TBAD-039	BUILDING S-91	199306	No cleanup required per Operable Unit #5 ROD
TBAD-040	BUILDING 9	199306	No cleanup required per Operable Unit #5 ROD
TBAD-041	BANNED PESTICIDE STORAGE AREA	199306	No cleanup required per Operable Unit #5 ROD
TBAD-042	WASTE MOTOR OIL/STORAGE AREA,BLDG 15	199602	No cleanup required per Operable Unit #5 ROD
TBAD-043	OUTSIDE DRUM STORAGE, BLDG 86 SOUTH SIDE	199602	No cleanup required per Operable Unit #5 ROD
TBAD-044	DRUM STAGING AREA/DRUM STORAGE - BLDG 1A	199306	No cleanup required per Operable Unit #5 ROD
TBAD-045	PESTICIDE SHOP	199306	No cleanup required per Operable Unit #5 ROD
TBAD-046	RADIOACTIVE WASTE SHELTERS	199306	No cleanup required per Operable Unit #5 ROD
TBAD-047	DRMO HW STORAGE FACILITY	199306	No cleanup required per Operable Unit #5 ROD
TBAD-048	DRUM STORAGE - BUILDING 700	199306	No cleanup required per Operable Unit #5 ROD
TBAD-049	DRUM STORAGE - BUILDING 702	199306	No cleanup required per Operable Unit #5 ROD
TBAD-050	DRUM STORAGE - BUILDING 703	199306	No cleanup required per Operable Unit #5 ROD
TBAD-051	DRUM STORAGE - BUILDING 10-C	199306	No cleanup required per Operable Unit #5 ROD
TBAD-052	DRUM STORAGE - BUILDING 23	199306	No cleanup required per Operable Unit #5 ROD
TBAD-053	BATTERY ACID NEUTRALIZATION/BATTERY SHOP	199306	No cleanup required per Operable Unit #5 ROD
TBAD-054	PHOTO LAB BUILDING 11	199306	No cleanup required per Operable Unit #5 ROD
TBAD-055	UXO AREA IN NORTH END OF INSTALLATION	199306	No cleanup required per Operable Unit #5 ROD
TBAD-056	FACILITY SANITARY SEWERS	199306	No cleanup required per Operable Unit #5 ROD
TBAD-057	INCINERATOR	199306	No cleanup required per Operable Unit #5 ROD
TBAD-058	FIRE FIGHTING TRAINING AREA	199909	No cleanup required per Operable Unit #5 ROD

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
TBAD-059	SMALL ARMS & MACHINE GUN RANGE	200004	No cleanup required per Operable Unit #5 ROD
TBAD-060	RAD STORAGE AREA	199306	No cleanup required per Operable Unit #5 ROD
TBAD-061	BARNEY'S LAKE/HUMMLER RUN	200004	No cleanup required per Operable Unit #5 ROD
TBAD-062	NPDES OUTFALLS	199306	No cleanup required per Operable Unit #5 ROD
TBAD-063	PCB TRANSFORMERS	199609	No cleanup required per Operable Unit #5 ROD
TBAD-064	COAL PILE/HEATING PLANT	198705	No cleanup required per Operable Unit #5 ROD
TBAD-065	SANDBLASTING UNIT	199306	No cleanup required per Operable Unit #5 ROD
TBAD-066	UST SITE RESTORATION AREAS	199603	No cleanup required per Operable Unit #5 ROD

IRP Schedule

Date of IRP Inception: 197904

Past Phase Completion Milestones

1980

PA (TBAD-001 - SANITARY LANDFILL 1963, TBAD-002 - LANDFILL AREA, TBAD-003 - ASH PITS, TBAD-005 - ORIGINAL BURNING AREA, TBAD-019 - ORIGINAL STP, TBAD-020 - STP BAR SCREEN, TBAD-021 - STP PARSHALL FLUME, TBAD-022 - STP PRIMARY SETTLING TANK, TBAD-023 - STP DOSING TANK, TBAD-024 - STP SECONDARY SETTLING TANK, TBAD-025 - STP RECIRCULATION PIT, TBAD-026 - FLASH MIX/FLOCCULATION TANK, TBAD-027 - FINAL SETTLING TANK, TBAD-028 - SLUDGE THICKENER, TBAD-029 - SAND FILTER, TBAD-030 - STP CHLORINE CONTACT CHAMBER, TBAD-031 - STP DIGESTERS, TBAD-032 - SEWAGE DRYING BEDS, TBAD-033 - DEWATERED SLUDGE/SLUDGE STORAGE SITE, TBAD-034 - EQUALIZATION BASIN, TBAD-035 - SEWAGE SLUDGE ROLL-OFF, TBAD-036 - DRUM/DUMPSTER STORAGE AREA, TBAD-037 - INDUSTRIAL WASTE STORAGE AREA BLDG 10C, TBAD-046 - RADIOACTIVE WASTE SHELTERS, TBAD-051 - DRUM STORAGE - BUILDING 10-C, TBAD-055 - UXO AREA IN NORTH END OF INSTALLATION, TBAD-059 - SMALL ARMS & MACHINE GUN RANGE, TBAD-060 - RAD STORAGE AREA)

1987

CS (TBAD-064 - COAL PILE/HEATING PLANT)
 SI (TBAD-039 - BUILDING S-91, TBAD-054 - PHOTO LAB BUILDING 11, TBAD-055 - UXO AREA IN NORTH END OF INSTALLATION, TBAD-056 - FACILITY SANITARY SEWERS, TBAD-061 - BARNEY'S LAKE/HUMMLER RUN, TBAD-062 - NPDES OUTFALLS, TBAD-063 - PCB TRANSFORMERS, TBAD-065 - SANDBLASTING UNIT)
 RFA (TBAD-064 - COAL PILE/HEATING PLANT)
 PA (TBAD-009 - CYANIDE SUMP, TBAD-010 - CYANIDE OXIDATION TANKS, TBAD-011 - CHROMIUM SUMP, TBAD-012 - CHROMIUM REDUCTION TANK, TBAD-013 - ACID/ALKALI SUMP, TBAD-014 - SURGE TANK, TBAD-015 - SULFIDE PRECIPITATION PRETREATMENT, TBAD-016 - ACID/ALKALI SURGE TANK, TBAD-017 - CHROMIUM SURGE TANK, TBAD-018 - OVERFLOW/EXCESS BACKWASH TANK, TBAD-038 - BUILDING S-90, TBAD-039 - BUILDING S-91, TBAD-040 - BUILDING 9, TBAD-041 - BANNED PESTICIDE STORAGE AREA, TBAD-042 - WASTE MOTOR OIL/STORAGE AREA, BLDG 15, TBAD-043 - OUTSIDE DRUM STORAGE, BLDG 86 SOUTH SIDE, TBAD-044 - DRUM STAGING AREA/DRUM STORAGE - BLDG 1A, TBAD-053 - BATTERY ACID NEUTRALIZATION/BATTERY SHOP, TBAD-054 - PHOTO LAB BUILDING 11, TBAD-056 - FACILITY SANITARY SEWERS, TBAD-061 - BARNEY'S LAKE/HUMMLER RUN, TBAD-062 - NPDES OUTFALLS, TBAD-063 - PCB TRANSFORMERS, TBAD-065 - SANDBLASTING UNIT)

1988

PA (TBAD-004 - BURNING AREAS E/NE OF BARNEY'S LAKE)

1989

IRA (TBAD-004 - BURNING AREAS E/NE OF BARNEY'S LAKE)

1990

SI (TBAD-001 - SANITARY LANDFILL 1963, TBAD-002 - LANDFILL AREA, TBAD-003 - ASH PITS, TBAD-004 - BURNING AREAS E/NE OF BARNEY'S LAKE, TBAD-005 - ORIGINAL BURNING AREA, TBAD-006 - BORROW PITS, TBAD-007 - AREA B, STAGING AREA, TBAD-008 - OAKES SWAMP DISPOSAL AREA, TBAD-009 - CYANIDE SUMP, TBAD-010 - CYANIDE OXIDATION TANKS, TBAD-011 - CHROMIUM SUMP, TBAD-012 - CHROMIUM REDUCTION TANK, TBAD-013 - ACID/ALKALI SUMP, TBAD-014 - SURGE TANK, TBAD-015 - SULFIDE PRECIPITATION PRETREATMENT, TBAD-016 - ACID/ALKALI SURGE TANK, TBAD-017 - CHROMIUM SURGE TANK, TBAD-018 - OVERFLOW/EXCESS BACKWASH TANK, TBAD-019 - ORIGINAL STP, TBAD-020 - STP BAR SCREEN, TBAD-021 - STP PARSHALL FLUME, TBAD-022 - STP PRIMARY SETTLING TANK, TBAD-023 - STP DOSING TANK, TBAD-024 - STP SECONDARY SETTLING TANK, TBAD-025 - STP RECIRCULATION PIT, TBAD-026 - FLASH MIX/FLOCCULATION TANK, TBAD-027 - FINAL SETTLING TANK, TBAD-028 - SLUDGE THICKENER, TBAD-029 - SAND FILTER, TBAD-030 - STP CHLORINE CONTACT CHAMBER, TBAD-031 - STP DIGESTERS, TBAD-032 - SEWAGE DRYING BEDS, TBAD-033 - DEWATERED SLUDGE/SLUDGE STORAGE SITE, TBAD-034 - EQUALIZATION BASIN, TBAD-035 - SEWAGE SLUDGE ROLL-OFF, TBAD-036 - DRUM/DUMPSTER STORAGE AREA, TBAD-037 - INDUSTRIAL WASTE STORAGE AREA BLDG 10C, TBAD-038 - BUILDING S-90, TBAD-040 - BUILDING 9, TBAD-041 - BANNED PESTICIDE STORAGE AREA, TBAD-042 - WASTE MOTOR OIL/STORAGE AREA, BLDG 15, TBAD-043 - OUTSIDE DRUM STORAGE, BLDG 86 SOUTH SIDE, TBAD-044 - DRUM

	STAGING AREA/DRUM STORAGE - BLDG 1A, TBAD-045 - PESTICIDE SHOP, TBAD-046 - RADIOACTIVE WASTE SHELTERS, TBAD-047 - DRMO HW STORAGE FACILITY, TBAD-048 - DRUM STORAGE - BUILDING 700, TBAD-049 - DRUM STORAGE - BUILDING 702, TBAD-050 - DRUM STORAGE - BUILDING 703, TBAD-051 - DRUM STORAGE - BUILDING 10-C, TBAD-052 - DRUM STORAGE - BUILDING 23, TBAD-053 - BATTERY ACID NEUTRALIZATION/BATTERY SHOP, TBAD-057 - INCINERATOR, TBAD-058 - FIRE FIGHTING TRAINING AREA, TBAD-059 - SMALL ARMS & MACHINE GUN RANGE, TBAD-060 - RAD STORAGE AREA)
PA	(TBAD-006 - BORROW PITS, TBAD-007 - AREA B, STAGING AREA, TBAD-008 - OAKES SWAMP DISPOSAL AREA, TBAD-045 - PESTICIDE SHOP, TBAD-047 - DRMO HW STORAGE FACILITY, TBAD-048 - DRUM STORAGE - BUILDING 700, TBAD-049 - DRUM STORAGE - BUILDING 702, TBAD-050 - DRUM STORAGE - BUILDING 703, TBAD-052 - DRUM STORAGE - BUILDING 23, TBAD-057 - INCINERATOR, TBAD-058 - FIRE FIGHTING TRAINING AREA)
1991	
RI/FS	(TBAD-004 - BURNING AREAS E/NE OF BARNEY'S LAKE, TBAD-007 - AREA B, STAGING AREA)
IRA	(TBAD-007 - AREA B, STAGING AREA)
1995	
PA	(TBAD-066 - UST SITE RESTORATION AREAS)
1996	
RA(C)	(TBAD-063 - PCB TRANSFORMERS, TBAD-066 - UST SITE RESTORATION AREAS)
RI/FS	(TBAD-037 - INDUSTRIAL WASTE STORAGE AREA BLDG 10C, TBAD-038 - BUILDING S-90, TBAD-042 - WASTE MOTOR OIL/STORAGE AREA, BLDG 15, TBAD-043 - OUTSIDE DRUM STORAGE, BLDG 86 SOUTH SIDE, TBAD-063 - PCB TRANSFORMERS)
1997	
RI/FS	(TBAD-001 - SANITARY LANDFILL 1963)
RD	(TBAD-004 - BURNING AREAS E/NE OF BARNEY'S LAKE, TBAD-007 - AREA B, STAGING AREA)
1998	
RI/FS	(TBAD-005 - ORIGINAL BURNING AREA)
RA(C)	(TBAD-004 - BURNING AREAS E/NE OF BARNEY'S LAKE, TBAD-007 - AREA B, STAGING AREA)
1999	
RI/FS	(TBAD-058 - FIRE FIGHTING TRAINING AREA)
2000	
RD	(TBAD-001 - SANITARY LANDFILL 1963)
RI/FS	(TBAD-008 - OAKES SWAMP DISPOSAL AREA, TBAD-032 - SEWAGE DRYING BEDS, TBAD-059 - SMALL ARMS & MACHINE GUN RANGE, TBAD-061 - BARNEY'S LAKE/HUMMLER RUN)
2001	
RA(C)	(TBAD-001 - SANITARY LANDFILL 1963)
2002	
PA	(TBAD-067 - U AREA)
2005	
SI	(TBAD-067 - U AREA)
2006	
RA(C)	(TBAD-067 - U AREA)

Projected Phase Completion Milestones

See attached schedule

IRP Schedule

Projected Record of Decision (ROD)/Decision Document (DD) Approval Dates

Site ID

Site Name

ROD/DD Title

ROD/DD Date

Final RA(C) Completion Date: 200607

Schedule for Next Five-Year Review: 2017

Estimated Completion Date of IRP at Installation (including LTM phase): 204309

TOBYHANNA ARMY DEPOT IRP Schedule

 = phase underway

SITE ID	SITE NAME	PHASE	FY14	FY15	FY16	FY17	FY18	FY19+
TBAD-001	SANITARY LANDFILL 1963	RA(O)						
SITE ID	SITE NAME	PHASE	FY14	FY15	FY16	FY17	FY18	FY19+
TBAD-004	BURNING AREAS E/NE OF BARNEY'S LAKE	RA(O)						
SITE ID	SITE NAME	PHASE	FY14	FY15	FY16	FY17	FY18	FY19+
TBAD-007	AREA B, STAGING AREA	RA(O)						
SITE ID	SITE NAME	PHASE	FY14	FY15	FY16	FY17	FY18	FY19+
TBAD-067	U AREA	RA(O)						

TOBYHANNA ARMY DEPOT
Army Defense Environmental Restoration Program
Military Munitions Response Program

MMRP Summary

Installation Total Army Environmental Database-Restoration (AEDB-R) Sites/Closeout Sites Count: 6/5

Installation Site Types with Future and/or Underway Phases

1 Firing Range
(TYAD-001-R-01)

Most Widespread Contaminants of Concern

Explosives, Metals, Munitions and explosives of concern (MEC)

Media of Concern

Soil

Completed Remedial Actions (Interim Remedial Actions/ Final Remedial Actions (IRA/FRA))

Site ID	Site Name	Action	Remedy	FY
TYAD-001-R-01	FAR-A, Powder Smoke Ridge	FRA	INSTITUTIONAL CONTROLS	2006

Duration of MMRP

Date of MMRP Inception 200207

Estimated Date for Remedy-In-Place (RIP)/Response Complete (RC): 201302/200510

Date of MMRP completion including Long Term Management (LTM): 204309

MMRP Contamination Assessment

Contamination Assessment Overview

An Army-wide range inventory was completed in the early 2000s. Six Military Munitions Response Program (MMRP) sites were identified at TYAD. Since then, four of the MMRP sites were determined not to need any additional investigation or cleanup and they were closed.

Cleanup Exit Strategy

The LTM at TYAD-001-R-01 includes institutional controls and will continue. Additional RI at TYAD-002-R-01 will be completed.

MMRP Previous Studies

	Title	Author	Date
1995	Archives Search Report FINDINGS for the former Tobyhanna Artillery Range	USACE Rock Island District	SEP-1995
2000	Engineering Evaluation/Cost Analysis AOC 55 UXO Area on Powder Smoke Ridge	PMC	APR-2000
2005	Final Site Inspection Report	Malcolm Pirnie, Inc.	MAR-2005
2009	Munitions and Explosives of Concern (MEC) Removal Action at Barstow Radar Construction Site	Weston Solutions	MAR-2009
2010	Construction Support Requiring the Investigation and Removal of Munitions and Explosives of Concern (MEC) Munitions Response Site (MRS) TYAD-01-R-01 Seal Beach Radar	Weston Solutions	MAR-2010
2011	Investigation and Removal of Munitions and Explosives of Concern (MEC) Munitions Response Site (MRS) TYAD-02-R-01 (Firing Point No. 6)	Weston Solutions	DEC-2011

TOBYHANNA ARMY DEPOT
Military Munitions Response Program
Site Descriptions

Site ID: TYAD-001-R-01

Site Name: FAR-A, Powder Smoke Ridge

STATUS

Regulatory Driver: CERCLA

MRSP Score: 04

Contaminants of Concern: Explosives, Metals, Munitions and explosives of concern (MEC)

Media of Concern: Soil

Phases	Start	End
PA.....	200207.....	200305
SI.....	200309.....	200503
RA(C).....	200501.....	200510
LTM.....	200510.....	204309

RIP Date: N/A

RC Date: 200510

SITE DESCRIPTION

This 478-acre area, also known as Powder Smoke Ridge, is in the northern portion of the installation. The site is also part of the former Camp Summerall. It contains an artillery range used during WWI and WWII, as well as a small arms and machine gun range, and a pistol range used during the 1960s.

The area was previously defined as former artillery range (FAR) A. Based on the findings of the SI, TYAD-001R-01 includes FAR A - sub-area 1A (FAR-A-1A), FAR A - sub-area 1B (FAR-A-1B), and FAR B - sub-area 2 (FAR-B-2). FAR-A-1A was identified as target area no. 5, and FAR-A-1B and FAR-B-2 were identified as overlapping range fan areas. The MEC presence for these areas is known and the fenceline that already exists has been extended to include FAR-B-2.

The TYAD has been partially delisted from the NPL (or Superfund). The range is OU 4, also referred to as AOC No. 55 of the NPL site. In the ROD dated September 2000, institutional controls were the chosen remedial alternative, because terrain ruled the other remedial alternatives not feasible. The small arms and machine gun and pistol ranges are located within the restricted area of AOC No. 55 and overlap the firing fan of the FAR. The institutional controls at AOC No. 55 include barbed wire fencing, signage, security patrols, deed restrictions, education, and periodic reviews. The fencing surrounds an area of 800 acres, which includes the entire FAR-A.

In 1998 an air defense radar facility was built on approximately 20 acres. The footprint of the radar testing facility and an area of 100 feet around the footprint of the facility were cleared of UXO to a depth of four feet. During the excavation of the footprint of the radar facility, 37mm projectiles, 75mm projectiles, 81mm mortars (one containing white phosphorus), as well as an M38 fuze, an M49 flare, an adapter booster and US Coast Guard projectiles were discovered. Two water towers are located on the former range, within the restricted area, but are fenced so workers cannot gain access to AOC No. 55.

A former small arms and machine gun range was located in the firing fan of the FAR. This range was initially used in the early-1960s as a 170-meter small arms range and then as a fixed-position small arms range. The fixed-position range was a mounted machine gun range that fired through an earth-covered concrete tube into an embankment. Its use was discontinued in 1971. This range was also used between 1967 and 1971 for .30- and .50-caliber weapons. The small arms and machine gun range was closed as part of the September 2000 Final TYAD Closeout Document for five NFA AOCs.

A former pistol range was located south of the small arms range, and within the FAR's firing fan. The pistol range was used from 1967 to 1971. As a result of Base Realignment and Closure (BRAC) 05, MEC clearance was completed on 37 acres.

CLEANUP/EXIT STRATEGY

The LTM and MEC clearance as part of construction of a radar test site are being conducted. Institutional controls have been implemented and maintained. Fence clearing will be scheduled every three years.

Site Closeout (No Further Action) Summary

Site ID	Site Name	NFA Date	Documentation
TYAD-001-R-02	FAR-A-2	200503	ROD signed in 2000.
TYAD-001-R-03	FAR-A-3	200503	ROD signed in 2000.
TYAD-002-R-01	FAR-B-1 (FP #6)	201302	
TYAD-002-R-02	FAR-B-1 (Fan)	200503	ROD signed in 2000.
TYAD-003-R-01	Machine Gun Range	200503	ROD signed in 2000.

MMRP Schedule

Date of MMRP Inception 200207

Past Phase Completion Milestones

2003

PA (TYAD-001-R-01 - FAR-A, Powder Smoke Ridge, TYAD-001-R-02 - FAR-A-2, TYAD-001-R-03 - FAR-A-3, TYAD-002-R-01 - FAR-B-1 (FP #6), TYAD-002-R-02 - FAR-B-1 (Fan), TYAD-003-R-01 - Machine Gun Range)

2005

SI (TYAD-001-R-01 - FAR-A, Powder Smoke Ridge, TYAD-001-R-02 - FAR-A-2, TYAD-001-R-03 - FAR-A-3, TYAD-002-R-01 - FAR-B-1 (FP #6), TYAD-002-R-02 - FAR-B-1 (Fan), TYAD-003-R-01 - Machine Gun Range)

2006

RA(C) (TYAD-001-R-01 - FAR-A, Powder Smoke Ridge)

Projected Phase Completion Milestones

See attached schedule

Projected Record of Decision (ROD)/Decision Document (DD) Approval Dates


To Be Determined







Final RA(C) Completion Date: 200510

Schedule for Next Five-Year Review: 2017

Estimated Completion Date of MMRP at Installation (including LTM phase): 204309

TOBYHANNA ARMY DEPOT MMRP Schedule

 = phase underway

SITE ID	SITE NAME	PHASE	FY14	FY15	FY16	FY17	FY18	FY19+
TYAD-001-R-01	FAR-A, Powder Smoke Ridge	LTM						

Community Involvement

Technical Review Committee (TRC): 199101

Community Involvement Plan (Date Published): 199811

Restoration Advisory Board (RAB): RAB established 199503

RAB Adjournment Date: 200510

RAB Adjournment Reason: All environmental restoration remedies are in place and are operating properly and successfully.

Additional Community Involvement Information

In general, the RAB members have concurred with the planned actions. They have participated in reviewing several reports, including the closeout, RD documents, community relations plans, proposed RA plans, and RODs.

Administrative Record is located at

Tobyhanna Army Depot
Public Affairs Office
11 Hap Arnold Blvd
Tobyhanna, PA 18466
(570)615-7308

Information Repository is located at

Pocono Mountain Public Library
5540 Memorial Boulevard (Rt. 611)
Coolbaugh Township Municipal Center
Tobyhanna, PA 18466
(570)894-8860

Current Technical Assistance for Public Participation (TAPP):N/A

TAPP Title: N/A

Potential TAPP: N/A

